



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/090,819 | 03/06/2002 | Katsuhiro Ishii | Q68804 | 5697 |
| 23373 | 7590 | 03/21/2006 | EXAMINER | |
| SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037 | | | NGUYEN, THUAN T | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2618 | |

DATE MAILED: 03/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|---|--|
| Office Action Summary | Application No. 10/090,819 | Applicant(s) ISHII, KATSUHIRO | |
| | Examiner THUAN T. NGUYEN | Art Unit 2685 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 7, and 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida (U.S. Patent 5,926,466) in view of Yamada (U.S. Patent No. 5,737,697).

Regarding claim 1, this limitation is met by Ishida as Ishida discloses a transmitting circuit using plural transmission frequency band and a communication terminal unit comprising the transmitting circuit with an antenna and its other components (Fig. 2) comprising an input stage amplifier for amplifying an input signal and an operating condition setting circuit for controlling an optimally amplified frequency band by setting an operating condition of the input stage amplifier as well as a high pass filter and a low pass filter connected to an output of the input stage amplifier for amplifying a signal of frequency band passed by the high-pass filter and the low pass filter correspondingly, a high frequency band last stage amplifier for amplifying the

Art Unit: 2685

signal of frequency band passed by the high pass filter together with a low frequency band last stage amplifier for amplifying the signal of frequency band passed by the low pass filter, i.e., refer to Fig. 2 for upper branch (take a look from right to left for the TX or transmitting circuit), same as Fig. 3 of the present application, as input signal at 33 under a voltage setting control circuit VCO 12, then the input signal is amplified at common amplifier 20, then the amplified signal is going through a low pass filter 23b and a high pass filter 23a for appropriate frequency bands, the top circuit is for low frequency band 900MHz and the lower circuit is for the high frequency band 1800MHz as noted before providing the signals to antenna 1 for transmission (see col. 15/lines 25-55).

Applicant argues that Ishida does not provide at least the step of “an operating condition setting circuit for controlling an optimally amplified frequency band by setting an operating condition of the input stage amplifier”; however, this step simply refers to have a bias voltage setting circuit coupled to a first input stage amplifier, and Yamada teaches the same feature (refer to Yamada, Figs. 8-9, and col. 7/line 55 to col. 8/line 3). Therefore, it would have been obvious to one of ordinary skill in the art to modify Ishida’s system with Yamada’s teaching technique as noted in order to control and provide an operating condition of the input stage amplifier as noted in Yamada, column 8, lines 4-26.

As for claim 2, this limitation is met as Ishida shows to include transistors and setting a bias voltage of the transistors with the use of a VCO (Fig. 2/item 12 and a closer look at Fig. 27 and col. 24/lines 1-35 for VCO setting a bias voltage).

Art Unit: 2685

As for claim 3, this limitation is met as Ishida discloses to have dual band for GSM 900 and DCS 1800 frequency bands (Fig. 2, with 900MHz and 1800MHz bands addressed).

As for claim 7, Ishida further shows components of the mobile phone comprising an antenna, a transmitting, and a modulating/demodulating circuit, a switch for switching to receive and/or transmit signal, a baseband signal processing circuit for processing the demodulated signal (Fig. 2, with antenna 1, switch 2 for TX and RX, demodulator 16a & 16b, modulator 19, and the baseband signal processing circuit at 20 & 21 after the demodulated signal provided to modulator 19) in addition to apparatus and method of high frequency power amplifier as discussed in claim 1 above.

As for claims 8-12, these claims are rejected for the reasons given in the scope of claims 1-3 and 7 as discussed in details above. In addition to claim 8, Ishida does not provide at least the step of “a setting circuit, coupled to the common amplifier, for setting an operating condition of the common amplifier based on a frequency band of the input signal”; however, this step simply refers to have a bias voltage setting circuit coupled to a first input common stage amplifier, and Yamada teaches the same feature (refer to Yamada, Figs. 8-9, and col. 7/line 55 to col. 8/line 3). Therefore, it would have been obvious to one of ordinary skill in the art to modify Ishida’s system with Yamada’s teaching technique as noted in order to control and provide a setting circuit for setting an operating condition of the input common stage amplifier based on the frequency band of the input signal as noted in Yamada, column 8, lines 4-26.

Art Unit: 2685

4. Claims 4-7 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida and Yamada as in claim 1 above in view of Dent et al (US Pub No. 2002/0101907 A1).

Regarding claims 4 and 13, Ishida and Yamada do not address that the communication device including “class C amplifier”; however, in a same field of providing multi-band communication, Dent teaches a same technique of using class C amplifier (Dent, Figs. 1, 4-5, and page 3/section 0033; and page 6/section 0057 for class C amplifier). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined Ishida and Yamada’s technique with Dent’s technique of using class C amplifier in order to adapt to mismatch power level within the communication device, and Dent offers the adjustable matching network as disclosed for preserve the power amplifier linearity (Dent, page 6, section 0057).

As for claims 5-6 and 14-15, in further view of claim 4 above, Dent further teaches “wherein all the amplifiers and filters are formed on same semiconductor die and wherein each of the amplifiers is produced by GaAs process (page 5, par. 0048, 0051).

Conclusion

5. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to the New Central Fax number:

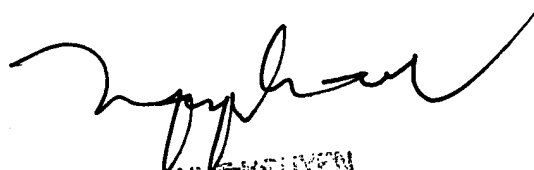
(571) 273-8300, (for Technology Center 2600 only)

Hand deliveries must be made to Customer Service Window,
Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

Art Unit: 2685

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Thuan Nguyen whose telephone number is (703) 308-5860. The examiner can normally be reached on Monday-Friday from 9:30 AM to 7:00 PM, with alternate Fridays off.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



TONY T. NGUYEN
PATENT EXAMINER

Tony T. Nguyen
Art Unit 2685
March 13, 2006